Claims

1. A process for producing a catalyst for gas-phase oxidations, which comprises
weighing a particulate inert support having a total mass of $M_{support}$ into a fluidized-bed apparatus,
providing an aqueous suspension of a catalytically active material or sources thereof and a binder having a binder content of B_{susp},
fluidizing the inert support by introduction of a gas stream heated to a temperature of T_{gas} at a flow rate of Q_{gas}, and
spraying the suspension at a rate of Q_{susp} onto the fluidized inert support,
wherein Q_{gas}, Q_{susp}, B_{susp}, $M_{support}$ and T_{gas} are selected within the ranges

$3000 \leq Q_{gas}$ [m^3/h] ≤ 9000, $1000 \leq Q_{susp}$ [g/min] ≤ 3500,
$2 \leq B_{susp}$ [% by weight] ≤ 18, $60 \leq M_{support}$ [kg] ≤ 240.
$75 \leq T_{gas}$ [°C] ≤ 120

so that a parameter K defined as

$$K = 0.020\, Q_{gas} - 0.055\, Q_{susp} + 7.500\, B_{susp} - 0.667\, M_{support} + 2.069\, T_{gas} - 7$$

satisfies the relationship $127.5 \leq K \leq 202$.

2. The process according to claim 1, wherein the parameter K is in a range $136.0 \leq K \leq 193.5$ and
$4500 \leq Q_{gas}$ [m^3/h] ≤ 7500, $1500 \leq Q_{susp}$ [g/min] ≤ 3000,
$5 \leq B_{susp}$ [% by weight] ≤ 15, $100 \leq M_{support}$ [kg] ≤ 200,
$80 \leq T_{gas}$ [°C] ≤ 115.

3. The process according to claim 2, wherein the parameter K is in a range $143 \leq K \leq 184.5$ and
$5500 \leq Q_{gas}$ [m^3/h] ≤ 6500, $2000 \leq Q_{susp}$ [g/min] ≤ 2500,
$6 \leq B_{susp}$ [% by weight] ≤ 11 $120 \leq M_{support}$ [kg] ≤ 180,
$90 \leq T_{gas}$ [°C] ≤ 115.

4. The process according to any of claims 1 to 3, wherein the gas which is introduced is air.

5. The process according to any of claims 1 to 4, wherein a second aqueous suspension of catalytically active material and binder is provided and is sprayed onto the fluidized support which has been coated with the first suspension.

6. The process according to claim 5, wherein the support which has been coated

with the first suspension is dried before the second suspension is sprayed onto it.

7. The process according to any of claims 1 to 6, wherein the particulate inert support is provided in the form of spheres, cylinders, rings or columns, preferably with dimensions of from 5 to 15 mm.

8. The process according to any of claims 1 to 7, wherein the fluidized-bed apparatus is a container for accommodating the particulate support in whose lower region a dish-like depression is provided and which comprises a central tube for introducing the gas which extends essentially axially downward in the container and opens into the depression, an essentially annular deflection shield which is fixed to the central tube in the upper region of the container and a guide ring which is located in the lower region of the container and surrounds the central tube essentially concentrically over part of its length and means for spraying-in the first and, if applicable, second suspension.

9. The process according to claim 8, wherein the first or second suspension comprises TiO_2 and V_2O_5 particles, where at least 90% by volume of the V_2O_5 particles have a diameter of 20 µm or less and at least 95% by volume of V_2O_5 particles have a diameter of 30 µm or less.

10. The process according to any of claims 1 to 7, wherein V_2O_5 particles or dissolved vanadium is used for the first or second suspension.

11. The use of the catalyst prepared according to any of claims 1 to 10 for preparing phthalic anhydride from o–xylene, naphthalene or mixtures thereof.